

# Metal Film Resistors, Industrial, $\pm 2\%$ and $\pm 5\%$ Tolerance



## FEATURES

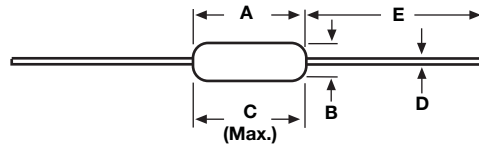
- Dual power rating:  
 $P_{70} = 0.25\text{ W}$  with 1.5 % stability  
 $P_{70} = 0.50\text{ W}$  with 2.0 % stability
- $\pm 2\%$  and  $\pm 5\%$  tolerance
- Temperature coefficient:  $\pm 100\text{ ppm/K}$  and  $\pm 200\text{ ppm/K}$
- Tape and reel packaging for automatic insertion (52.4 mm inside tape spacing per EIA-296-E)
- Flame retardant epoxy conformal coating (red brown color)
- Standard 4 band color code marking for ease of identification after mounting
- Pure tin plating provides compatibility with lead (Pb)-free and lead containing soldering processes
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
 COMPLIANT

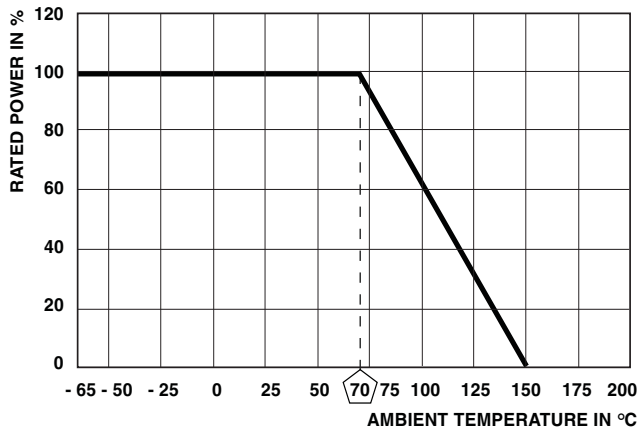
STANDARD ELECTRICAL SPECIFICATIONS						
PRODUCT	POWER RATING $P_{70}$ W	LIMITING ELEMENT VOLTAGE MAX. $V_{\Xi}$	TEMPERATURE COEFFICIENT $\pm\text{ ppm/K}$	TOLERANCE $\pm\%$	RESISTANCE RANGE $\Omega$	E-SERIES
CCF07	0.25	250	100	2, 5	10 to 1M	E24
CCF07	0.5	250	100	2, 5	10 to 1M	E24
CCF07	0.25	250	200	5	1.1M to 2M	E24
CCF07	0.5	250	200	5	1.1M to 2M	E24

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	CCF07
Rated Dissipation, $P_{70}$	W	0.25/0.5
Maximum Working Voltage, $U_{\max}$	$V_{\Xi}$	$\leq 250$
Insulation Voltage (1 min)	$V_{\text{eff}}$	500
Dielectric Strength	$V_{\text{AC}}$	450
Insulation Resistance	$\Omega$	$\geq 10^{11}$
Operating Temperature Range	$^{\circ}\text{C}$	-65 to +150
Terminal Strength (pull test)	lb	2
Weight	g	0.35 max.

PART NUMBER AND PRODUCT DESCRIPTION						
PART NUMBER: CCF07240RGK E36						
C	C	F	0	7	2	4
0	R	G	K	E	3	6
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
PRODUCT	RESISTANCE VALUE	TOLERANCE CODE	TEMPERATURE COEFFICIENT	PACKAGING	SPECIAL	
CCF07	R = decimal K = thousand M = million 10R0 = 10 $\Omega$ 680K = 680 k $\Omega$ 2M00 = 2.0 M $\Omega$	G = $\pm 2\%$ J = $\pm 5\%$	K = 100 ppm/K N = 200 ppm/K	E36 = lead (Pb)-free T/R (5000 pieces)	Blank = standard (dash number) (up to 3 digits) From 1 to 999 as applicable	

**DIMENSIONS** in inches (millimeters)


PRODUCT	A	B	C (Max.)	D	E
CCF07	0.245 ± 0.020 (6.22 ± 0.51)	0.090 ± 0.008 (2.29 ± 0.20)	0.295 (7.5)	0.022 ± 0.002 (0.58 ± 0.05)	1.100 ± 0.040 (27.94 ± 1.02)

**DERATING**

**MARKING**

The nominal resistance and tolerance are marked on the resistor using four colored bands in accordance with IEC 60062, marking codes for resistors and capacitors.

**RESISTANCE VALUES**

Vishay CCF07 is available in the standard 24 resistance values per decade. Values are obtained from the following decade table by multiplying by powers of 10. As an example: 24 can represent 24 Ω, 240 Ω, 2.4 kΩ, 24 kΩ or 240 kΩ.

10	18	33	56
11	20	36	62
12	22	39	68
13	24	43	75
15	27	47	82
16	30	51	91

**PERFORMANCE**

TEST <sup>(1)</sup>	MAX. ΔR (Typical Test Lots)
Thermal Shock	± 1.0 %
Short Time Overload	± 0.5 %
Low Temperature Operation	± 0.5 %
Moisture Resistance	± 1.5 %
Resistance to Soldering Heat	± 0.5 %
Shock/Bump	± 0.5 %
Vibration	± 0.5 %
Terminal Strength	± 0.5 %
Dielectric Withstanding Voltage	± 0.5 %
Life	± 1.5 % <sup>(2)</sup>

**Notes**

- <sup>(1)</sup> Test specifications as per IEC 60115-1  
<sup>(2)</sup> Life ΔR is ± 2.0 % for 1/2 W rating



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